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ABSTRACT

On June 1, 1992, the Ministry of Education in Honduras started a pilot project using Interactive Radio Instruction (IRI) to deliver adult basic education. This case study examines the IRI project, or the "Basic Education for All" project, which is predicated on the conviction that educational investment in basic education for young working people could effectively accelerate economic and social development. The document begins with a brief discussion on illiteracy rates and the failure of adult education programs in Honduras. It goes on to note how the Basic Education for All project adapted an IRI elementary education curriculum to cover six academic years (levels); the design of the first and last three levels are described in detail. Discussion then focuses on the following factors that were important for establishing the project as a permanent educational system: institutional roles; catering to adult learners; the role of radio facilitators; delivery of audio and print resources; managing the radio system; supervising the centers; training needs; marketing; and funding. Evaluation and outcomes are discussed and achievement data is then delineated according to gender. Six figures present comparisons by subject, level, and gender. (Contains 20 references.) (AEF)

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ADULT BASIC EDUCATION IN HONDURAS:

MANAGING MULTIPLE CHANNELS

LearnTech Case Study Series No. 9

Cárleton Corrales

April 1995

IR017691

LearnTech

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Foreword

Adapting the lessons from earlier interactive radio experiences for an adult audience was as big a leap as LearnTech ever took in two respects: first, like the RADECO project in the Dominican Republic for children who had no schools to go to, there was no real formal framework to support a learning system, and what there was — the system of evening classes — was known to be largely dysfunctional; second, matching interactive radio methodologies to the learning styles of adult learners had never been tried.

The first problem has still only been partially overcome. Grafting radio onto a system that is underfunded and minimally managed is not going to fix the problems in the system. Those problems have had to be tackled as well, and the system managers are looking carefully at issues of management structure and training. What the interactive methodology has provided that was lacking before is a much greater sense of direction on the part of learners and facilitators; assistance to facilitators in managing learning where they formerly found only limited guidance in printed materials; and a sense of confidence and accomplishment on the part of learners in the improved system. Like RADECO, the *Basic Education for All* project has demonstrated that interactive radio instruction could adapt to situations outside the formal primary school classroom.

The second issue — how to adapt interactive methodologies to adult learning styles — was similar in some ways to the problem faced in Papua New Guinea on the Radio Science project: could interactive radio methodologies adapt to a new learning situation? what instructional principles still applied and how should they be practiced? to what extent could the highly directive pedagogy that had worked so well teaching mathematics and language to young children be used to teach the same learning objectives to this older audience? how would adults take to an instructional system that was used, for example, to requiring out-loud verbal responses so that teachers could monitor student learning? what blend of radio/listening/speaking instruction and printed/reading/writing instruction would work best, and how would it vary among subjects and levels?

The evaluation results indicate that Dr. Carleton Corrales, COEDUCA, USAID/Honduras and the Ministry of Education found a large measure of right answers to this mix of system issues and

instructional issues. Learners using the *Basic Education for All* system have performed significantly better than comparable learners in the evening classes. They have also performed better than children attending school all day in equivalent primary school classes. Problems in the management system are easy to identify, even if they are harder to fix. But the instructional materials were developed too fast to permit as much experimentation with different instructional approaches as Dr. Corrales or COEDUCA would have liked. As interactive strategies from earlier projects were tested, formative evaluation showed what was working well, what evidently needed to be changed, and confirmed that the system that has been put in place was working better than anything previously tried.

Dr. Corrales of the Academy for Educational Development deserves the praise and admiration of his LearnTech colleagues for the singleminded and creative way he devised and promoted this new adaptation of interactive instruction. He has demonstrated the power of multichannel learning by augmenting the existing system of facilitators using print materials with the strategic use of radio; by an emphasis on genuine community involvement in managing the learning centers; and by his insistence on improving the management of the system as it really existed rather than copying a model of conventional schooling.

My thanks to a valuable colleague.

Mike Laflin

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Illiteracy in Honduras

Almost one fifth of the world's population is illiterate. Most live in the poorest nations, in a cycle of poverty with few opportunities to break out. While in Latin America and the Caribbean illiteracy rates are lower than many other poor regions at approximately 15%, there are wide differences between countries and between populations within countries. Those in poverty and without access to relevant and effective systems of learning generally remain isolated and without the means to change their lives.

In Honduras, the rate of illiteracy is almost twice the Central American average at 28.5% (1994). Within the labor force, 33% report having no formal education at all. Sixty percent of the illiterate population (603,502 persons) are between 10 and 29 years of age.

Like many countries, the overlap of population growth and illiteracy is documented in Honduras. Research suggests that there is a relationship between population growth and illiteracy. Statistical data show low fertility among the most educated groups. The poor and illiterate have a high population growth rate and are, at once, caught in a cycle of high costs, fewer opportuntities and little education. Increases in basic education and literacy levels are considered to be fundamental to decreased population growth, increased economic status and improved quality of life.

The formal education system has not failed, it simply cannot keep up. Rapid population growth in the country has made it difficult for the government to provide adequate traditional educational programs. From 1975 to 1994, Honduras doubled its population. Total primary enrollment has increased, the student drop-out rate is decreasing from a high of 20% and the grade repetition rate has also diminished. The educational situation seems to be improving, but not quickly or effectively enough.

Honduras is characterized by a young population which is already in the labor force but which has low productivity. This population has not had the opportunity to acquire the essential tools and attitudes necessary for economic growth. The *Basic Education for All* Project is predicated on the conviction that educational investment in basic education for these young working people could effectively accelerate economic and social development.

Broadening Opportunities for Learning

Honduras faces the challenge of designing effective educational programs which adequately reach and interest the adult working population. But adult basic education programs have often been unsuccessful because of a lack of understanding of the population they serve and the need for methodologies that promote active learning. Illiterate adults are not helpless. They have accumulated experiences and ways to cope with their difficult surroundings. They regularly participate and interact with a learning environment, although it may not immediately resemble a conventional educational setting.

Adult basic education programs have often been unsuccessful because of a lack of understanding of the population they serve.

The formal education system alone cannot solve the Honduran education problems. There are not sufficient resources to replicate a formal model for adult learning which may not be appealing or feasible for the working population. For the past decade, the Government of Honduras, USAID and the LearnTech project have been experimenting with a curriculum that is more relevant and appealing to adults, more interactive and immediate, and more cost-effective as a system of delivering adult basic education.

The Basic Education for All *Project*

On June 1, 1992 the Ministry of Education in Honduras started a pilot project using Interactive Radio Instruction(IRI) to deliver adult basic education. USAID provided technical assistance through the LearnTech Project and the Ministry of Education funded the radio facilitators, publicity, administrative staff and printed material. COEDUCA S.A., a private Honduran company with expertise in IRI methodology, was contracted to write and produce the programs.

The IRI adult basic education project, or the *Basic Education for All* Project, revitalized the Division of Adult Education at the Ministry of Education. The literacy "campaign" model favored in the past, had produced poor results in reducing illiteracy levels. Previously, the Ministry of Education managed only one relevant program in adult education: evening schools. There were many problems in these two hour per day schools, including low teacher attendance, poor academic achievement of the students and a general sense of disrepair. The *Basic Education for All* Project offered a mission, an interactive and multi-channel methodology, and a new full range of responsibilities. Projected costs of implementation were within the budget of the Division. In less than 18 months, it became the most coherent program in adult education in Honduras, and importantly, allowed the Division of Adult Education to contribute to the Honduran goal of education for all.

Basic Education for All became the most coherent program in adult education in Honduras.

At the time of writing, the General Division of Adult Education has offered the first and second levels of *Basic Education for All* in four departments: Francisco Morazán, El Paraíso, Choluteca and Valle. This short case study looks at how the new system grew out of the existing system of evening schools, and how a more systematic use of learning channels has revitalized it.

Designing IRI for Adult Education

A History of Radio for Primary Schools

Honduras had positive experiences with interactive radio instruction (IRI) and distance education for primary school education before beginning to develop a model for adult basic education. The USAID-funded IRI mathematics series, *The Family of Numbers*, developed from 1986 to 1989 for the first three grades of elementary education, was successful in reaching students and increasing test scores in formal primary schools.

In evaluations of *The Family of Numbers*, a comparison was made between three groups of Honduran children, one that received traditional instruction, one that used the new textbooks, and another that used the radio lessons in addition to the textbooks. At the end of the first grade, the same test was given to all three groups. In the traditional group, 38% of the children passed; in the textbook group, 59% passed; and in the radio group, 76% of the students passed.

Strong evidence from the *Escuelas Radiofonicas de la Iglesia Catolica* also showed that the use of radio as a means to deliver education was effective and far reaching in Honduras. Even remote learners had access to a radio. The medium could be used as both a formal and nonformal education tool.

Adapting the Curriculum

Curriculum design turned out to be harder than expected. First, the official adult education curriculum was only a shortened version of the primary school curriculum for children. Second, data from the research indicated that adults had a considerable body of knowledge and experience which was not being taken into account in the official curriculum. *Basic Education for All* implemented the following curriculum changes:

- Number of academic years covered by the curriculum extended from four to six levels. This meant abandoning the existing curriculum for evening schools (four levels) and moving to one that approximated the six years of primary education. There was still a total of 100 radio lessons per level. This offered the possibility of broadcasting at least two levels in one year and allowed participants to complete the cycle of primary education in three calendar years.

- Minimum Learning Objectives established. The curriculum design followed the Minimum Learning Objectives (MLO) developed for elementary education, so that those out-of-school youth and young adults who mastered the MLOs could receive a standard primary education diploma from the Ministry of Education. The third through sixth level curriculum was completely redesigned to follow a new format.

- Change in focus audience. The targeted "adult" learning audience was changed from the 35-40 year age group to a focus audience of out-of-school-youth and young adults in the 14-29 year age group.

- Summative evaluation. A summative evaluation for the third level was conducted using the items developed by the Evaluation Unit of Primary Education Efficiency Project. These items were developed in order to evaluate achievement of the Minimum Learning Objectives.

Beginning at the fourth level of *Basic Education for All*, printed material will become the main medium of instruction. Radio lessons from the fourth level to the sixth are expected to be complementary the printed materials and act as a motivator. Printed material can also be used independently of the radio lessons.

Design of the First Three Levels: Radio Predominates

The first three levels of *Basic Education for All* were designed following IRI methodology. Essentially this involved the following steps:

1. Planning for delivering interactive instruction. The radio lesson was to be the main medium of instruction with printed material taking on a complementary, but secondary role. Each level had 100 thirty-minute radio programs broadcast daily from Monday to Friday, and around sixty pages of printed material. More than one level could be broadcast during one calendar year.

2. Making broad curriculum decisions. The next step was to decide the academic weight of each subject in the curriculum. Arithmetic and reading and writing the Spanish language took the greatest amount of time at the beginning and then gradually decreased. Science and civics/social science started with less time and gradually increased in the time allocated to them.

3. Weaving in social values. A social values theme was woven into the radio lessons for the first and second levels. For example, a series of segments about the rights of women and children within the legal system of Honduras usually started with a dramatic story that depicted a common problem that they face. This was followed by a short discussion about the implicit social values. *Thanks to Life*, funded by the United Nations Fund for Population Activities, discussed the relationship between men and women. There was also an independent curriculum line in each lesson in second and third levels on Civics, Legal and Democratic Education.

Figure1.
Subject Matter Distribution Percentages
In Different Levels of Education For All

Level	Language	Math	Social Science	Science	Business	Voc. Ed.
First	60	30	10	-	-	-
Second	60	25	-	10	-	5
Third	40	25	10	10	5	10
Fourth	30	20	12	13	15	20
Fifth	20	20	15	15	20	10
Sixth	10	10	15	20	25	20

4. Developing master plans. A master plan was developed for each subject, made up of segments. Segments for each subject were woven into the whole basic education program, according to the academic weight of the subject. Each radio lesson contained segments from different subjects.

Figure 2.
Segment Distribution
Per Level and Subject

Level	Language	Math	Social Science	Science	Business	Voc.Ed.
First	520	260	86	-	-	-
Second	520	216	-	86	-	43
Third	346	216	86	86	43	86
Fourth	260	173	104	112	130	86
Fifth	173	173	130	130	173	86
Sixth	86	86	130	173	216	173
Total	1905	1124	536	993	562	474

Design of the Last Three Levels: Print Takes Over

The team who designed levels four through six of *Basic Education for All* had more time, resources and more clearly defined goals than the earlier curriculum design team. Nevertheless, they had to find a way to accommodate both achieving minimum learning objectives and also designing a curriculum based on the participants' needs. It had to integrate different knowledge areas and also respond to real problems faced by young adults. The design process involved the following steps:

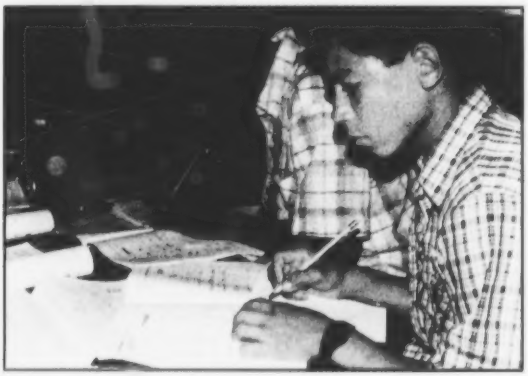
1. Elaborating goals. The Minimum Learning Objectives (MLOs) were elaborated by the Ministry of Education, under the Primary Education Efficiency Project, for the six grades of elementary education. MLOs were clustered according to one of five recurrent themes:

   - The individual and the family in productive work.
   - Health and food production.
   - National identity and cultural revival.
   - Sustainable use of natural resources and protection of the environment.
   - Citizen training for peace and democracy.

2. Establishing themes for each cluster of lessons. Once all the MLOs were allocated to one of the five clusters, each cluster

was developed into twenty lessons. Then a main theme for each of the twenty lessons was found. The role of the theme was to give unity so that all MLOs in the lessons supported each other and maintained the logical sequence of the entire series.

3. Reconceptualizing the content for adult learners. The last step was perhaps the most difficult: MLOs were written with children in formal schools in mind. The task at hand was to re-interpret them for "young adults" with a second chance to complete primary school, most of them living in rural areas and having some work experience. To reach this audience, the "dramatic context" was created as an integral part of the lesson.



A social values theme was woven into the radio lessons.

4. A Dramatic Setting: *Nuevo Amanecer*. Radio studio production had to create a setting representing a small rural town called *Nuevo Amanecer* (New Dawn). The lesson took place with two couples attending a radio school, overseen by a teacher. One couple was young and the other was older. Occasionally Mr. Chago, a grandfather figure who represented the community collective wisdom, was included. Four actors were usually able to handle all the characters in the lesson.

There were a total of 300 lesson outlines for the fourth, fifth and sixth levels of the *Basic Education for All* Project. Each lesson belonged to one of the five clusters desribed above. Each lesson plan had five parts: a label which placed it in one of the five

clusters, grade level and lesson number, main theme, suggested dramatic context and minimum learning objectives.

Printed Material in All Levels

Production of printed material for the first three levels of *The Education for All Project* was a joint effort of staff from the Ministry of Education, the LearnTech Project and COEDUCA. Printed material was designed as support for the radio lesson and followed the curriculum as it was implemented in the radio series. Lesson format was simple, no color was included. For the first and second levels the exercises were part of the lesson. A student workbook was added for the third level.

More Than a Project, A Basic Education System

The *Basic Education for All* Project was designed to be a permanent project for delivering basic education to out-of-school young adults. In order to ensure that the total system could be sustained, it was important to create institutional arrangements between the Government and other organizations that supported each other.

Institutional Roles

The institutional model for the *Basic Education for All* Project in Honduras involved four key players:

- the Ministry of Education,
- international donors represented by USAID/Washington and USAID/Honduras working through the LearnTech Project,
- COEDUCA, a private Honduran company with expertise in IRI, and
- grassroots organizations like the National Association of Peasants and small town authorities (municipalities).

This institutional arrangement worked quite well. The Ministry of Education did not have the capacity to develop a system using IRI methodology and was eager to have support from the LearnTech Project. LearnTech always looks for a local partner to work with and found one in COEDUCA. The MOE's Division of Adult Education was able to concentrate on the hard administrative tasks

and allow others to do materials development. The grassroots organizations were perhaps the most stable partners because they were the biggest stakeholders in the project.

The involvement of grassroots organizations was critical because the other key players each had features that could constrain long term success. One of the key partners, the Ministry of Education, changed its leadership every time a new government was elected. Technical support staff remained, but key decision-making was out of their range. COEDUCA, as a private company, lacked financial continuity because its funding usually came from new contracts. There was a chance that new priorities could move them to different assignments. The same argument could be made about the members of the LearnTech consortium whose funding also largely came from grants and contracts.

Because of the interest in bringing in Honduran stakeholders who would safeguard the longterm prospects of the system, business sector partners were also sought. However, a significant number of partners were needed in order to have the financial resources to play a substantive role in project implementation. Indeed, more effort was still needed to achieve a balance between private and public organizations which would promote long-term institutionalization. The system in Honduras remained overly reliant on the government, but the coalition still provided the most effective way to reach adult learners.

The radio facilitator was a central figure in the total adult education system.

Catering to Adult Learners

The *Basic Education for All* Project drew on an educational network of programs, each catering to the needs of the learner and situation at hand. IRI programs had proven successful in improving learning in the *formal schools* based on a conventionally-structured educational system composed of schools, teachers, students, supervisors, administrators and resources such as interactive radio instruction and texts. For adult education, however, the formal system was essentially nonfunctioning and inappropriate, and the nonformal system developed for out-of-school adults had to avoid making assumptions based on formal primary school models.

Basic Education for All for adults consists of three key parts:

1. The literacy community center and the radio facilitator
2. The delivery system: printed material and radio lesson
3. A supportive network of well-trained supervisors and grassroots organizations which are the stakeholders of the program.

The Role of the Radio Facilitators

The radio facilitator was a central figure in the literacy center and in the total adult education system. He or she was expected to facilitate the radio education programs and represent the interests of the community. For example, radio facilitators in the National Peasant Association (ACAN) organization were members of their communities and saw their roles not only as radio facilitators but as individuals tasked with strengthening their grassroots organization. Leadership and support from central offices of ACAN provide an extra boost to the entire project. In this case, a social network in the community was used and strengthened by the *Basic Education for All* Project and factored into mature and community oriented goals.

The radio facilitator in some isolated cases worked as a volunteer, but most of the time was paid a small salary by the Government or the equivalent in food from the United Nations World Food Programme. This payment was meant to complement the facilitator's main source of income. Facilitators were also sometimes young people who finished their primary education but were unemployed. Salaries were generally too low to sustain them. Quality was also an issue. The facilitators had at least a sixth grade

education. Specific training was provided so they could understand the operation of the program and their expected role during the radio lesson, how to use printed material, and how to conduct post broadcast activities with the students.

A social network in the community was strengthened by the project.

While most literacy centers were in school buildings or community centers, an increasing number were in private homes. Since the Project did not provide radios, participants often found it more convenient to listen in someone's home on a good quality radio. This was particularly true when students moved to second and third levels of *Basic Education for All* and formed friendships with fellow classmates. There were some lone listeners at home, but this number was difficult to estimate. Their presence may only be apparent at the end of the year as they arrive for the end-of-year test. No matter where people met, without the preparation and timely delivery of the broadcasts and printed material, learning could not have taken place.

Delivering the Educational Goods

Ensuring the delivery of the audio and print resources was often taken for granted in nonformal education projects. Usually there was heavy investment in producing a good radio lesson and excellent printed material; unfortunately, the same effort was not exerted in planning and implementing an effective delivery system. In order for the total system to work effectively, the printed material had to be delivered to each literacy center before the radio lesson was broadcast and the radio lesson had to be broadcast on time and on a regular basis. Often, production of printed material fell behind

schedule, which createed a very tight distribution schedule. Hiring private transportation proved more effective and less costly, but still one needed to allocate sufficient time.

Managing the Radio System

In designing the system to deliver radio lessons, *Basic Education for All* Project found that:

- Individual responsibility should be assigned, not assumed. A designated person should be responsible for getting the taped radio lessons to the station which will broadcast them.

- The quality of broadcasting service should be monitored. The broadcasting of the radio lesson should be monitored on a regular basis to see that the lessons are played in the right order, on schedule, according to the contract.

- Regional radio stations were effective in the long run. Although it may have seemed that problems would be multiplied when dealing with ten or more stations instead of one, regional stations have some advantages: there were substantial savings in broadcasting costs, reliability was higher and "tuning in" by the participants was easier.

- Audio-cassettes may also be effective. Four literacy centers used audiocassettes because of a weak radio signal in their area. Lessons were delivered in sets of ten cassettes (twenty lessons). Costs of duplicating the tapes and delivering them to a small number of centers were manageable. However, when electricity was not available, participants had to make intensive use of batteries to power the cassette player. In this case, batteries ran down much faster than just using the radio. This additional cost should be considered in wider implementation.

Supervising the Centers

The performance of the supervisors was central to the success of the project. Supervisors should visit centers and be considered an integral part of quality control. The best radio lesson or printed material would fail if a good system of quality control did not exist. The presence of the supervisors communicated more information to

facilitators and participants about the value of the program than reams of paper from central offices.

While the most important performance characteristic of a good supervisor was to visit the literacy centers regularly, surprisingly, most of them never do. Frequently, in the case of the government, supervision existed on paper and even on the payroll, but it did not function in practice. Assignment of these positions because of political connections seemed to be the stumbling block.

Training Needs

The experience of the *Basic Education for All* Project suggested that training should be ongoing. As soon as one level of competency was achieved by the program staff, new training needs emerged. This was particularly true if the goal was not only to carry out a project but to build a permanent program.

Training requirements fell into three categories:

1. Materials development. In this case, the LearnTech Project and COEDUCA created the materials.

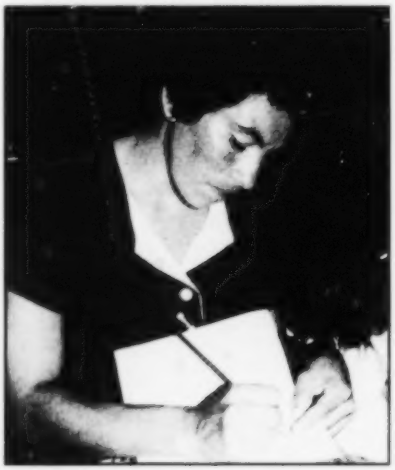
2. Training of staff at the Ministry of Education. Training for the Ministry was important to ensure their understanding and support.

3. Training of the field staff such as facilitators and town mayors. Trained facilitators managed the group well during broadcasting, motivated the students to attend the center and in general affected the attitude toward the project. In Honduras, facilitators attended a one-day training session before the start of broadcasting, and a one-day follow-up session halfway through the series. Training costs were low per unit, but in wide implementation of the series the expense of training facilitators became quite substantial. Different training was provided to small town mayors. The sole objective was to make them aware of the program and to raise their level of enthusiasm so they would keep the project running once international funds end.

Marketing

Marketing project services increasingly became an essential element in the *Basic Education for All* Project. Because illiteracy was often a consequence of low socioeconomic status and poverty, the concerns of this population often went unheard. Grassroots organizations could improve this situation. The *Basic Education for All* Project worked with the National Peasant Association with positive results, but this case was more the exception than the rule. Considerable work remained to be done to ensure that organizations, small towns and specific groups could voice their concerns about a lack of access to literacy programs. There was no doubt that better marketing should have been done with key decision-makers at the Ministry of Education, local Governments, the business sector and even among participants.

The commitment to adopt a program and to continue funding it showed the political will to solve an educational problem.



Funding Basic Education for All *in Honduras*

One of the biggest issues in any project of this kind was the cost of developing and implementing new materials, systems and strategies. Development costs in any given country were specific to that country and depended on what needed to be done. In Honduras, development costs included: basic educational research, curriculum formulation and development, radio lesson production, printed material, formative and summative evaluation, field testing of lessons and printed material in pilot projects, training faciltators, marketing, and external evaluation. Many projects had also faced the cost of training local staff to

develop the materials. In Honduras, the *Basic Education for All* Project training costs were reduced because most COEDUCA staff had been trained through the previous IRI mathematics project, *The Family of Numbers*.
Furthermore, many of the scripts were able to draw on the earlier programs for ideas and activities from the same series, which saved time and money.

The *Basic Education for All* Project was carried out by LearnTech, drawing on funds from three sources: the LearnTech Project's core contract, whose purpose was to disseminate and further develop the interactive learning methodology, provided $320,000 seed money over a three year period to design, write, produce and test the first two levels of programming, largely carried out by COEDUCA, the Honduran partner. Second, the USAID/Honduras Mission supported the activity through two of its own projects: The Primary Education Efficiency Project, which contributed $357,510 towards the cost of developing the third level and revising earlier programs, and the Strengthening Democratic Initiatives Project, which paid $116,196 for a series of civic education inserts into the radio programs. So the cost of developing the first three levels of adult basic education was $793,706.

Figure 3.

Production Cycle/ Levels	First	Second	Third	Fourth	Fifth	Sixth
Applied Research	yes	yes	yes	no	no	no
Curriculum Development	yes	yes	yes	yes	yes	yes
Scriptwriting	yes	yes	yes	yes	no	no
Radio Production	yes	yes	yes	no	no	no
Evaluation	yes	yes	yes	no	no	no
Field Testing	yes	yes	yes	no	no	no
Printed Material	yes	yes	yes	no	no	no

Implementation costs were usually funded by the government of the country where the program was going to be used, and the commitment to adopt a program and to continue funding it showed the political will to solve an educational problem. Cost per participant with educational radio programs could be considerably lower than competing delivery systems if there were many participants. Costs could also be shared by participants and private companies who wanted to support their workers. Implementation costs for the *Basic Education for All* Project

have been financed by the Government of Honduras. These included:

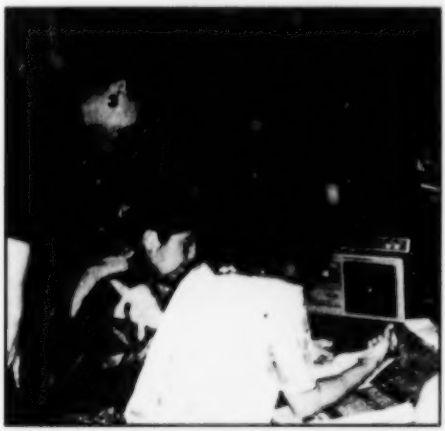
- payment for radio facilitators,
- printing and distribution of complementary material,
- contracts with regional radio stations to transmit the programs, and
- administrative costs such as supervision, student enrollment and accounting.

Evaluation and Outcomes

Formative evaluation provided information about acceptance of the program among users, the efficiency of the management systems, and how effective it was in improving student learning. This data fed back into the rest of the production cycle. Formative evaluation in the *Basic Education for All* Project was managed through a program of field visits and a weekly academic test.

Four evaluators went to different literacy centers. Using a lesson observation guide, field evaluators collected data on the level of understanding, interest and other reactions the students had for any part of the lesson. Weekly tests were administered to a sample of the participants in order to assess the achievement of learning goals for each content area. The first assessment was given as a pre-test and served as a baseline. One week after the content had been introduced in the radio lesson, the second test was administered. Finally, six weeks later the third test was given in order to assess longterm retention.

Participants in the experimental group had consistently better academic performance than control groups.



Summative evaluation of the *Basic Education for All* Project assessed the effectiveness of the program in promoting participant learning. The design involved a pre-test and a post test. The former provided the baseline, how much the students knew at the entry level, while the latter gave the final academic achievement of the participants. It was important to note that the summative evaluation data could be used only as a reference point, not as a definite statement on parts of or the entire educational system. Tests used in this evaluation only measure academic achievement.

In first and second levels of the project, the experimental groups received the complete system of radio lessons, printed materials and a facilitator to lead learning activities. Control groups came from the evening adult schools not receiving radio lessons, using only printed materials facilitated by a monitor. In the third level, third grade children from primary school provided an additional comparison group. Special care was taken that both groups, experimental and control, were similar in key variables such as economic status, gender and age.

Basic Education for All narrowed the gender gap in achievement between men and women.

For first and second levels of the project developed and tested in 1992 and 1993 respectively, summative evaluation data was collected only for mathematics and language (Spanish reading and writing). The control group was composed of evening schools in Tegucigalpa and Danly. The experimental groups were literacy centers in Francisco Morazán Department. Age, gender balance and socioeconomic status of both samples were very similar, although evening schools functioned only in urban centers. The students attended daily for two hours and usually a professional teacher was in charge of the classroom.

Student scores showed that participants in the experimental group had consistently better academic performance than control groups in both subjects, but the difference in mathematics scores was even greater. Two reasons could explain this superior performance in mathematics, both related to the quality of the radio programs themselves: first, the curriculum specialist and scriptwriters working on this series had the earlier experience of developing the Honduran primary mathematics IRI series, *The Family of Numbers*. Second, accumulated experience in curriculum development for mathematics could be traced back to the Nicaraguan Radio Mathematics in the 1970s, and LearnTech had experience with adaptations of those programs in many countries.

In language, there were differences in favor of the experimental group over the control group, but the differences were small. There was also wider disagreement among the specialists about curriculum design and learning process. This was the first time the series was developed and it included a considerable number of exercises and drills.

Figure 4.
Comparison Between Evening Schools and Basic Education for All
Percentages

First Level					
Post Test	Math	Language	Science	Social Studies	N
Evening Schools	48.7	59.9			
Education for All Centers*	88.1	82.5			

*Results on Education for All centers are based on 60 radio lessons.

Second Level					
Post Test	Math	Language	Science	Social Studies	N
Evening Schools	60	74			108
Education for All Centers	71	78			73

Third Level					
Post Test	Math	Language	Science	Social Studies	N
Evening Schools	45	81	65	54	144
Primary Schools***	34	54	52	42	263
Education for All Centers	56	67	72	64	87**

**Does not include 34 participants using radio cassettes.

***Test items were designed from MLOs as defined by the MOE.

The summative evaluation design for the third level of the *Basic Education for All* Project was different. Curriculum design for the radio lessons and printed materials were not only based on the Minimum Learning Objectives developed by the Ministry of Education, but all the test items were taken from the pool of items elaborated by the Evaluation Unit of the Primary Education Efficiency Project. This test was compiled and administered under the supervision of staff from the Evaluation Unit of PEEP.

Gender Results

Enrollment: At all levels, *Basic Education for All* (IRI) students showed lower attrition than students in traditional classrooms. Low attrition in IRI held especially true for men.

Figure 5. Enrollment by Gender
Level One*

Group	Male		Female		Total Number
	N	%	N	%	Enrolled
Control Pre test	77	49%	80	51%	157
Control Post test	47	43%	62	57%	109
Experimental Pre test	50	60%	34	40%	84
Experimental Post test	41	56%	32	44%	73

*Control Group: Students in traditional classes.
Experimental Group: Students learning by radio (IRI).

Figure 5a. Enrollment by Gender
Level Two*

Students	Control Group					Experimental Group				
	M	%	F	%	Total	M	%	F	%	Total
Initial Enrollment	136	47%	152	53%	288	58	54%	50	46%	108
Final Enrollment	116	52%	107	48%	223	53	56%	42	44%	95
Pre test Evaluation	77	49%	80	51%	157	50	60%	34	40%	84
Post test Evaluation	47	44%	60	56%	107	41	56%	32	44%	73

*Control Group: Night-school students in accelerated primary school.
Experimental Group: Students learning by radio (IRI).

Figure 5b. Enrollment by Gender
Level Three*

Students	Control 1			Control 2			Experimental		
	M	F	Total	M	F	Total	M	F	Total
Initial Enrollment	140	202	342	154	199	353	107	81	188
Final Enrollment	80	95	175	136	158	294	66	64	130
Pre-test Evaluation	72	105	177	159	134	293	69	72	141
Post-test Evaluation	56	88	144	142	121	263	31	56	87

* Control 1: 10 groups of students selected from accelerated primary schools (night schools) of Tegucigalpa. Students are equivalent to 4th and 5th grade levels.

Control 2: 10 groups of students selected from primary schools in the Central District. Students are equivalent to 3rd grade level.

Experimental Group: Fifteen groups of IRI students selected from various areas within the Department of Francisco Morazan.

In the control group pre tests, no significant difference existed between the number of men and women enrolled. By the post test, more men had dropped out than women. In the IRI group, both pre and post test enrollment was higher for men than women.

Achievement: *Basic Education for All* narrowed the gender gap in achievement between men and women in math and Spanish.

For level two, men scored higher in math than women, but women achieved higher learning gains. Learning gains were measured by the difference between pre test and post test scores and demonstrate students' improvement. In the post test, women in the IRI group scored significantly higher than women in the control group. Women scored higher than men in Spanish (except in the control pre test). In the IRI group, men had slightly higher learning gains than women.

Gender data for achievement were not available for Level One. All data was taken from "Informe anexo de resultados sobre la experiencia piloto de la serie Nuevo Amanecer de educación básica de adultos en Honduras", Empresa de Comunicación Educativa, July 1995.

Figure 6. Achievement by Subject and Gender
Level Two*

Group	Subject	Gender	Median Score'	Standard Deviation	N
Control Pre test	Math	Male	12.40	5.56	80
		Female	10.11	5.78	77
Control Post test	Math	Male	15.55	4.38	62
		Female	13.72	5.65	47
Experimental Pre test	Math	Male	13.33	5.56	30
		Female	10.83	5.61	46
Experimental Post test	Math	Male	17.44	5.05	32
		Female	16.81	4.30	
Control Pre test	Spanish	Male	17.07	2.66	80
		Female	16.53	4.43	77
Control Post test	Spanish	Male	17.63	2.78	62
		Female	17.87	3.16	47
Experimental Pre test	Spanish	Male	15.09	4.71	30
		Female	17.03	3.01	46
Experimental Post test	Spanish	Male	18.00	2.27	32
		Female	19.59	3.06	41

*Control Group: Night school students in accelerated primary school.
Experimental Group: Students learning by radio (IRI).

'Scores for math out of 23 possible points.
Scores for Spanish out of 24 possible points.

For level 3, men achieved higher post test math scores and had higher learning gains than women (except in Control 2, the

group of third graders). Among women, the IRI students demonstrated slightly higher learning gains than women in the control groups.

In Spanish pre and post tests, women in the IRI group and the control 2 group scored higher than men in the same groups. Women in the IRI group showed much higher learning gains than men. Among men, those in the IRI group achieved higher learning gains than men in both control groups.

Figure 6a. Achievement by Subject and Gender Level Three*

Subject	Control 1				Control 2				Experimental			
	Pre-test		Post-test		Pre-test		Post-test		Pre-test		Post-test	
	M	F	M	F	M	F	M	F	M	F	M	F
Spanish'	4.68	3.98	4.34	4.08	3.25	3.70	3.67	3.00	3.65	3.71	4.15	4.46
Math"	3.51	2.97	3.80	3.17	2.57	2.27	2.61	2.95	2.34	2.55	3.90	3.05

* Control 1: Level 3 students in the accelerated primary schools (night schools).
Control 2: Third graders in regular, primary day-schools.
Experimental: Students learning by radio (IRI).

' Scores for Spanish out of 7 possible points.
" Scores for math out of 8 possible points.

Conclusions

Technical development tasks for the first three levels of the *Basic Education for All* Project are complete. Each part was tested to ensure that IRI methodology, formerly designed for young children only, also worked effectively with youth and adults. Academic achievement of the participants was higher than in traditional evening schools and costs per student were much lower. While there was always room for improvement of the radio lessons and printed materials, it was believed that further revisions would not improve student achievement by a large enough margin to warrant the expenditure.

However, management of the system remains a concern. The critical objective is to increase the low persistence levels that characterize most adult nonformal education programs. Training of community facilitators will also be reviewed for ways to improve it. At the same time as the system is being evaluated, the program is being significantly expanded into the southern part of Honduras. A total of 1,250 centers are being organized at the time of writing with an

expected enrollment of 30,000 participants. Broadcasting of the first three levels will begin in June, 1995. To improve management of the system, 43 Ministry of Education field supervisors have been trained to work with community facilitators. These field supervisors answer to a twenty-person Technical Committee, which is charged with implementing, monitoring and supervising the system, and whose members must spend at least 50% of their time in the field.

Successful nonformal education programs have always been more responsive to the demands of their users than formal systems have; the alternative is usually to go out of business. The *Basic Education for All* Project is no different. It recognizes that it must develop a good product and deliver it efficiently in order to keep its clients. Thus far, the improved learning outcomes of this multichannel learning system suggest that it is providing better value than conventional adult evening schools or even the primary schools used for purposes of comparison.

The critical objective is to increase the low persistence levels that characterize most adult nonformal education programs.

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